ABSTRACT OF THE DISCLOSURE

Ports of a switch are assigned by a person, for example a network manager, to be for communication up the spanning tree toward the root switch ("up ports"), or down the spanning tree away from the root switch ("down ports"). This assignment is made by enabling "Uplinkguard" status for a desired up port, and by connecting the desired port to a switch which it is desired to place in the higher layer of the spanning tree. A port having Uplinkguard enabled is prevented, for example by software or firmware in its switch, from transitioning to a designated role. Uplinkguard enabling a port, by preventing the port from transitioning to the designated role, has at least two consequences: preventing the port from being selected by the STP to transmit to lower switches in the spanning tree; and, preventing the port from transmitting when a one way connectivity fault develops on that port. A port with Uplinkguard enabled may transition to root port role. In the event that there is one way connectivity from a port, that port will not receive BPDU messages, and if the port is in blocked state, it will believe that it should take over and become the designated port for the external link to which it is connected. Uplinkguard prevents the port from transitioning to designated role. When the port attempts to transition into designated role, Uplinkguard forces the port to transition into blocked role, thereby eliminating formation of loops caused by one way connectivity faults.